

REMARKS

This application has been amended in a manner that is believed to place it in condition for allowance at the time of the next Official Action.

Claims 1, 4-7, 9-10, 15-17 and 31-33 are pending in the application. Claims 1, 4-7, 9-10 and 15-17 have been amended to address the formal matters raised by the Examiner. New claims 31-33 have been added. Support for new claims 31-33 may be found generally throughout the specification and in original claims 1 and 2. Claims 2-3, 8, 11-14 and 18-30 are cancelled.

In the outstanding Official Action, the Examiner requested that a new abstract be submitted. In accordance with the Examiner's suggestion, applicant encloses with this amendment a new abstract pursuant to 37 CFR §1.72(b).

The Examiner also requested that the present specification be amended to incorporate the title "BRIEF DESCRIPTION OF THE FIGURES" on page 4 of the present specification. In accordance with the Examiner's suggestion, the specification has been amended to include this title.

As to the sequences recited in the present specification that are not identified by a sequence identification number, applicant notes that Table 1 shows various motifs and a variety of proteins that are compared with the proteins of the present invention in order to elucidate the functional significance of various sequences within the cloned

protein. This is also true of the information found on pages 7 and 8 of the present specification. As a result, applicant does not believe that a substitute sequence listing is required.

Claims 1, 3-5, 8-10 and 15-17 were objected to for containing several informalities. Claims 3 and 8 have been cancelled. As to dependent claims 4-5, 9-10 and 15-17, applicant believes that the terminology "according to" is appropriate. As a result, applicant requests that the objection be withdrawn.

Moreover, applicant believes that claim 17 is not an improper dependent claim. Rather, claim 17 is directed to a host cell transformed or transfected with a vector according to claim 16. Claim 16 itself is directed to a vector comprising a sequence according to claim 1. As a result, applicant believes that claim 17 is a proper dependent claim.

Claims 1, 4-10 and 15-17 were rejected under 35 USC §112, first paragraph, for allegedly not satisfying the written description requirement. Applicant believes that the present amendment obviates this rejection.

In imposing the rejection, the Official Action alleged that the specification does not adequately describe an isolated nucleic acid sequence from any kind of source that encodes apopholasin as recited in the claims. However, claim 1 has been amended to recite an isolated, purified or recombinant nucleic acid sequence comprising a sequence that encodes a pholasin protein of SEQ ID NO: 1, a sequence that is at least 70%

homologous to SEQ ID NO: 1, a sequence that hybridizes to SEQ ID NO: 1 under stringent conditions, or an oligonucleotide specific for any of the sequences specified in (a) or (b). As a result, applicant believes that the present amendment obviates this rejection. Indeed, applicant notes that the Official Action acknowledges that the written description provides an adequate disclosure for the production of a protein encoded by SEQ ID NO: 1.

Claims 15 and 17 were rejected for allegedly not satisfying the enablement requirement. This rejection is respectfully traversed.

In imposing the rejection, the Official Action stated that the present disclosure does not reasonably provide enablement for producing any kind of living organism comprising an isolated sequence that encodes apopholasin, or producing any kind of cell, plasmid, virus or live organism comprising substantially homologous sequences that encode apopholasin. However, as noted above, the claims have been amended to recite that the claimed sequence relates to SEQ ID NO: 1. Moreover, applicant notes that claims 15 and 17 have been amended so that the term "living organism" has been deleted and the term "invertebrate organism" has been inserted. As a result, applicant believes that the present disclosure clearly enables the claimed invention.

Claims 1-10, 15-17 and 27 were rejected under 35 USC §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant believes that the present amendment obviates this rejection.

In imposing the rejection, the Official Action alleged that claim 1 was indefinite for reciting the term "apopholasin". Claim 1 has been amended so that this term no longer appears in the claims. Moreover, applicant notes that claim 8 has been cancelled.

Claim 1 was further rejected for reciting the sequences (a), (b) or (c). The Official Action alleged that these sequences were unclear. However, applicant believes that claim 1 is definite to one skilled in the art. The terms "(a), (b)" merely indicate sequences that encompass the scope of claim 1.

Claim 1 was also rejected for reciting the phrase "but for the degeneracy of the genetic code". However, claim 1 has been amended so that this phrase is no longer recited.

As to the term "stringent conditions", applicant submits that one skilled in the art would know what these conditions are and indeed would use such conditions daily in order to undertake hybridization techniques. As a result, applicant believes that the term is definite to one skilled in the art.

Claims 2 and 3 have been cancelled. As to claims 6 and 7, claim 7 has been amended to indicate that the claimed construct encodes a pholasin protein, wherein the expression of the protein in a substrate, when in association with a luciferin, signals the presence of oxygen or an oxygen metabolite in the substrate by producing a light signal. As a result, applicant believes that the claims are definite to one skilled in the art.

Claim 9 was rejected for reciting the term "a recombinant construct". However, claim 9 has been amended to recite an independent claim. In amending claim 9, applicant believes that all terms have been provided in antecedent basis.

Claim 27 has been cancelled.

Claim 14 was rejected under 35 USC §101 for allegedly being directed to non-statutory subject matter. However, claim 14 has been cancelled.

Claims 1 and 10 were rejected under 35 USC §102(b) as allegedly being anticipated by SCHEELE et al. 5,643,766. Claims 1, 6, 7, 10 and 15-17 were rejected under 35 USC §102(b) as allegedly being anticipated by PRASHER et al. (Biochemistry, 26, 1326-1332, 1987). Applicant believes that the present amendment obviates these rejections.

SCHEELE et al. teach a method for preparing double stranded DNA from a single stranded template which involves an oligonucleotide having a homopolymeric tail and an oligonucleotide primer that is homopolymeric and using these

tools to generate a strand of DNA that is complementary to a single stranded template. SCHEELE et al. make no mention or suggestion of the claimed sequence.

PRASHER et al. teach a sequence of a photoprotein, i.e. aequorin from the phylum Cnidaria (the hydrous, hydroids, jellyfish, sea anemones, and corals). However, PRASHER et al. do not disclose or suggest SEQ ID NO: 1 nor do they teach a sequence that would fall within the claimed percentage of homology recited in the claims. As a result, applicant believes that PRASHER et al. fail to anticipate the claimed invention.

In view of the above, applicant believes that the cited publications fail to anticipate or render obvious the claimed invention.

In view of the foregoing remarks, therefore, applicant believes that the present application is in condition for allowance at the time of the next Official Action. Allowance and passage to issue on that basis is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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Appendix:

The Appendix includes the following item:

- a new Abstract of the Disclosure